

REMARKS

Claims 22-25 and 29-35 are cancelled without prejudice or disclaimer and new claims 36-40 are added. After entry of this amendment, claims 26-28 and 36-40 are pending. Support for the new claims is found for example at page 11, line 28- page 12, line 2 (claim 36), page 12, lines 7-9 (claim 37), page 12, lines 7-10 (claim 38), page 11, lines 9-12 (claim 39) and page 13, lines 3-16 (claim 40). No new matter has been added.

The claims were rejected. After entry of the above amendments with the cancellation of claims 22-25, the only rejections remaining are for the alleged obviousness of claims 26-28. For the reasons that follow, Applicants respectfully request reconsideration and withdrawal of those rejections.

Claim Rejections under 35 USC §103

Claims 26-28 were rejected as obvious over BASF AG (GB 815 538) in combination with Gazzard (US Patent 3,970,755). The Examiner's argument is based on the assertion that it would have been obvious for a person of skill in the art to combine the teachings of BASF AG, which discloses the use of KHDO, with the teachings of Gazzard, which teaches the use of BIT, to arrive at a third composition comprising a combination of KHDO and BIT for the purposes of protecting an industrial material from microbial infestation.

In fact, the teaching of Gazzard is not as straightforward as the Examiner appears to have concluded. Gazzard teaches the use of specific quaternary ammonium compounds, especially LBDAC, as complexes with BIT (see col. 1, lines 16-19 and col. 2, lines 10-17). The skilled person reading Gazzard would be led to use complexes of LBDAC and closely related compounds with BIT because of the superior results reported with these complexes (see col. 6, lines 45-53 and col. 7, lines 52-56, for example).

Thus, Gazzard's teaching is narrow: the combination of BIT with specific cationic quaternary ammonium compounds gives improved activity. Gazzard provides no explanation or mechanism to explain the effect arising from these specific combinations so the person of ordinary skill in the art has no general understanding and only has the narrow teaching of the specific combinations.

In the absence of any general guidance from Gazzard, the skilled person is unable to make any predictions as to what other combinations of BIT with another compound might provide an advantageous effect. Indeed, any such extrapolation made by the skilled reader would be non-obvious.

Furthermore, KHDO is not mentioned in Gazzard. Also, the skilled person would not perceive any similarity between LBDAC and KHDO; their structures are very different. Therefore, the skilled person would not be led to substitute KHDO for the LBDAC in the compositions of Gazzard.

BASF does not supply the missing motivation to combine or substitute. BASF discloses KHDO in the context of its use as the sole active substance (see example 1 and table 1, as noted by the Examiner). BASF does not suggest that KHDO should be used in any other way.

Based on the above analysis, it is clear from a closer inspection of BASF and Gazzard that the two teachings are entirely independent of each other. The person of ordinary skill finds no teaching whatsoever in Gazzard that something other than the specific quaternary ammonium compounds disclosed in that document should be used with BIT. In BASF, the ordinary skilled person is presented only with a teaching that KHDO is effective when used as a sole fungicidal agent. In this connection, it is notable that KHDO is mentioned only once in BASF in the context of only one of the compounds tested in example 1, whereas a number of other compounds are tested in multiple examples such that the skilled person would infer that these other compounds were more preferred than KHDO.

Furthermore, the present application shows the unexpected synergistic effect with the present inventive compositions obtained against a broad spectrum of microbial infections. For instance, example 1 discloses the synergistic effect of a combination of KHDO and BIT.

Both active ingredients are tested – separately and in combination with each other – against representative bacteria, yeast, and mold. As Table 1 on page 15 shows, the concentration of a combined KHDO/BIT blend required for complete kill of the organisms was much less than the concentration required for KHDO or BIT alone. Specifically, in the styrene butadiene emulsion Butofan DS 2258, a KHDO/BIT blend (1:1 ratio) had complete kill at only 75 ppm,

whereas KHDO alone required a concentration of 1000 ppm and BIT alone required a concentration of 200 ppm. The results with the Butofan 305D emulsion are similar.

Example 3 demonstrates in a similar manner strong synergistic effects of a combination of KHDO and a polyvinylamine/vinylformamide copolymer. The table on page 19 lists so-called "synergy factors." The smaller the number, the better the synergy effect. The test is a well known test in the field of biocides that is often cited (e.g., EP 1 332 675 B1 at para. [0032]-[0034]).

In sum, Applicants respectfully urge the Examiner to reconsider the obviousness rejection in view of the failure of the art to suggest or motivate the ordinary skilled person to make the substitutions to Gazzard to achieve the presently claimed methods, and in view of the unexpected synergy reported for the claimed combinations.

CONCLUSION

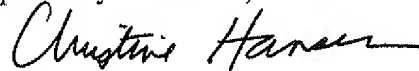
In view of the above remarks and further in view of the above amendments, Applicants respectfully request withdrawal of the rejections and allowance of the claims.

Applicants reserve all rights to pursue the non-elected claims and subject matter in one or more divisional applications, if necessary.

No further fees are believed due. If any additional fee is due, the Director is hereby authorized to charge any deficiency to our Deposit Account No. 03-2775, under Order No. 13317-00001-US from which the undersigned is authorized to draw.

Dated: November 3, 2008

Respectfully submitted,



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